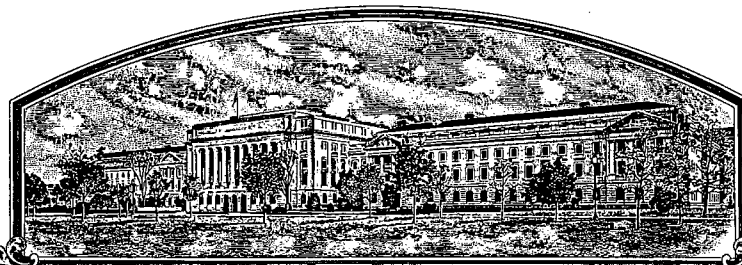


No.



201100284

# THE UNITED STATES OF AMERICA

**TO ALL TO WHOM THESE PRESENTS SHALL COME:**  
**Pioneer Hi-Bred International, Inc.**

Whereas, THERE HAS BEEN PRESENTED TO THE

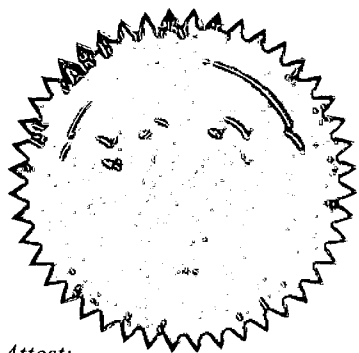
Secretary of Agriculture

An application requesting a certificate of protection for an alleged distinct variety of sexually reproduced, or tuber propagated plant, the name and description of which are contained in the application and exhibits, a copy of which is hereunto annexed and made a part hereof, and the various requirements of LAW in such cases made and provided have been complied with, and the title thereto is, from the records of the PLANT VARIETY PROTECTION OFFICE, in the applicant(s) indicated in the said copy, and Whereas, upon due examination made, the said applicant(s) is (are) adjudged to be entitled to a certificate of plant variety protection under the LAW.

Now, therefore, this certificate of plant variety protection is to grant unto the said applicant(s) and the successors, heirs or assigns of the said applicant(s) for the term of TWENTY years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable basic seed of the variety in a public repository as provided by LAW, the right to exclude others from selling the variety, or offering it for sale, or reproducing it, or importing it, or exporting it, or conditioning it for propagation, or stocking it for any of the above purposes, or using it in producing a hybrid or different variety therefrom, to the extent provided by the PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

*SORGHUM*

*'PHOEWLVIT'*



Attest:

*In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this eighteenth day of August, in the year two thousand and eleven.*

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

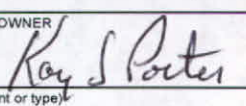
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER <b>Pioneer Hi-Bred International, Inc.</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME <b>56-144</b>		3. VARIETY NAME <b>'PHOEVLVIT'</b>	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) <b>2260 CR 60, Plainview, TX 79072</b>		5. TELEPHONE (include area code) <b>(806) 296-4680</b>		FOR OFFICIAL USE ONLY PVPO NUMBER <b>#201100284</b>	
		6. FAX (include area code) <b>(806) 296-4677</b>			
7. IF THE OWNER NAMED IS NOT A "PERSON". GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) <b>Corporation</b>		8. IF INCORPORATED GIVE STATE OF INCORPORATION <b>Iowa</b>		9. DATE OF INCORPORATION <b>May 27, 1926</b>	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers)				FILING AND EXAMINATION FEES: <b>\$ 4,382.00</b> DATE <b>2/28/2011</b>	
Dr. Kay S. Porter Pioneer Hi-Bred International, Inc. 2260 CR 60 Plainview, TX 79072				CERTIFICATION FEE: \$ DATE	
Steve Callistein Pioneer Hi-Bred International, Inc. 7100 N.W. 62 <sup>nd</sup> Avenue Johnston, IA 50131					
11. TELEPHONE (Include area code) <b>(806) 296-4680</b>		12. FAX (Include area code) <b>(806) 296-4677</b>		13. E-MAIL <b>kay.porter@pioneer.com</b>	
14. CROP KIND (Common Name) <b>Sorghum</b>		16. FAMILY NAME (Botanical) <b>Graminae</b>		18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
15. GENUS AND SPECIES NAME OF CROP <b>Sorghum bicolor</b>		17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		IF SO PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.	
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)				20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If yes, answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (If no, go to item 23)	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input checked="" type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) h. <input checked="" type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)				21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input checked="" type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
				22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input checked="" type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)				24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANTBREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as maybe applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.					
The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.					
Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF OWNER 			SIGNATURE OF OWNER		
NAME (Please print or type) <b>Kay S. Porter</b>			NAME (Please print or type)		
CAPACITY OR TITLE <b>Director</b>		DATE <b>FEBRUARY 28, 2011</b>		CAPACITY OR TITLE <b>DATE</b>	

(Sworn to instructions and information collection burden statement)

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**GENERAL INSTRUCTIONS:** To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (*See Section 97.6 of the Regulations and Rules of Practice*). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

**NOTES:** It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (*See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(hi of the regulations and Rules of Practice.*)

**Plant Variety Protection Office**

Telephone: (301) 504-5518

FAX: (301) 504-5291

General E-mail: [PVP@mail.usda.gov](mailto:PVP@mail.usda.gov)

Homepage: <http://www.ams.usda.gov/science/pvpo/PVPindex.htm>

#201100284

**SPECIFIC INSTRUCTIONS:**

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <http://www.ams.usda.gov/lsg/seed.htm>.

**ITEM**

- 19a. Give:
- (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
  - (2) the details of subsequent stages of selection and multiplication;
  - (3) evidence of uniformity and stability; and
  - (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
  - (2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
  - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO. " specified (**seed of this variety be sold by variety name only, as a class of certified seed**), the applicant **MAY NOT** reverse this affirmative decision
20. If "Yes is after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (*See Regulations and Rules of Practice, Section 97.103*).
23. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*
24. *See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.*

**22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that maybe certified.)**

**23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)**

**24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)**

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, S.W., Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

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**SORGHUM**  
**'PHOEWLVIT'**

14A. Exhibit A. Origin and Breeding History

**PEDIGREE: ('PHOECJYIT' x 'PHWKGJQIT')XXC1111X**

Pioneer proprietary line 'PHOEWLVIT', Sorghum bicolor M., a grain sorghum inbred parent, was developed by Pioneer Hi-Bred International, Inc. from the F<sub>2</sub> population of the single cross ('PHOECJYIT' x 'PHWKGJQIT'). Both 'PHOECJYIT' and 'PHWKGJQIT' are proprietary lines of Pioneer Hi-Bred International, Inc.

The pedigree of 'PHOECJYIT' is ('PHBEPOYJ' x 'PHC9WQYIT'). Both 'PHBEPOYJ' and 'PHC9WQYIT' are proprietary lines of Pioneer Hi-Bred International, Inc.

'PHBEPOYJ' was granted PVP under Application No.9800111.

The pedigree of 'PHC9WQYIT' is ['PHR9CJIT' x ('PHC9NQLIT' x 'PHI7AFIT')]. 'PHR9CJIT', 'PHC9NQLIT' and 'PHI7AFIT' are all proprietary lines of Pioneer Hi-Bred International, Inc.

The pedigree of 'PHR9CJIT' is (({Martin x [Java Kafir x (Combine Kafir 60 x "Big Yellow Endosperm")] x [Plainsman x (a selection from a variety called "Polestra Large Seed" x "Big Yellow Endosperm")]})). Martin, Java Kafir, Combine Kafir 60, "Big Yellow Endosperm", Plainsman and "Polestra Large Seed" (abbreviated PLS) are all public varieties.

The pedigree of 'PHC9NQLIT' is ('PHKRJIT' x 'PHR9YIT'). Both 'PHKRJIT' and 'PHR9YIT' are proprietary lines of Pioneer Hi-Bred International, Inc.

The pedigree of 'PHKRJIT' is {[Martin x (Combine Kafir 60 x Shkaura)] x (Plainsman x Polestra Large Seed)}. Martin, Combine Kafir 60, Shkaura, Plainsman and Polestra Large Seed are public varieties.

The pedigree of 'PHR9YIT' is [(Combine Kafir 60 x Big Yellow Endosperm) x (Midland X Polestra Large Seed)]. Combine Kafir 60, Big Yellow Endosperm, Midland and Polestra Large Seed are all public varieties.

The pedigree of 'PHI7AFIT' is ('PHK7LIT' x 'PHI7GYIT'). Both 'PHK7LIT' and 'PHI7GYIT' are proprietary lines of Pioneer Hi-Bred International, Inc.

The pedigree of 'PHK7LIT' is {[Martin x Wet Kaoliang) x Redlan] x (Martin x Blackhull Kafir)}. Martin, Wet Kaoliang, Redlan and Blackhull Kafir are public varieties.

The pedigree of 'PHI7GYIT' is [(Martin x Blackhull Kafir) x (Combine Kafir 60 x Graingrass #5)]. Martin, Blackhull Kafir, Combine Kafir 60 and Graingrass#5 are all public varieties.

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The pedigree of 'PHWKGJQIT' is ('PHWCGYIT' x 'PHKCTJYIT'). Both 'PHWCGYIT' and 'PHKCTJYIT' are proprietary lines of Pioneer Hi-Bred International, Inc.

The pedigree of 'PHWCGYIT' is [(Martin x 385Red Kafir) x 'PHB86']. Martin and 385Red Kafir are public varieties.

'PHB86' was granted PVP under Application No. 8900236.

The pedigree of 'PHKCTJYIT' is [(Martin x Java Kafir) x 'PHCIWJI']. 'PHCIWJI' is a proprietary line of Pioneer Hi-Bred International, Inc. Martin and Java Kafir are public varieties.

The pedigree of 'PHCIWJI' is {(Martin x Java Kafir) x [(Martin x 385 Red Kafir) x PI276853]}. Martin, Java Kafir and 385Red Kafir are public varieties. PI276853 is a plant introduction in the USDA germplasm collection and is publicly available.

The pedigree method of breeding was used in the development of this inbred as per the following:

The F<sub>1</sub> cross was made at Manhattan, Kansas, in the summer of 2003 and F<sub>2</sub> seed was obtained by selfing hybrid plants during the winter of 2003-04 in Puerto Vallarta, MX. The F<sub>2</sub> population was grown at Manhattan, Kansas, during the summer of 2004 and plants were self-pollinated. The F<sub>3</sub> family was grown as a bulk in Puerto Vallarta, MX, during the winter of 2004-05. Plants were selfed and forty head were saved from the F<sub>3</sub> population. The F<sub>4</sub> family was grown during the summer of 2005 at Manhattan, Kansas where two heads were selfed. Pollen was carried from selected rows to sterile female lines in A1 cytoplasm to begin the sterilization of the selected lines. The F<sub>5</sub> was grown in Puerto Vallarta, MX during the winter of 2005-06 and two heads were selfed. The F<sub>6</sub> was grown in Manhattan, Kansas during the summer of 2006 where two heads were selfed. The F<sub>7</sub> was grown Puerto Vallarta, MX during the winter of 2006-07 and two heads were selfed. In addition, the male sterile A-line version of the line was test crossed to an inbred male tester line for evaluation of combining ability. The F<sub>8</sub> was grown in Manhattan, Kansas, during the summer of 2007 and the line was bulked from the best row of two. Yield trials were also grown in Manhattan, KS involving the testcross hybrids made at F<sub>7</sub>. Based on yield test results and nursery observation, the line was determined to possess some superior qualities and it was selected to advance in the test program. The line was bulked at F<sub>8</sub> and no further selection within the line was practiced. Additional hybrid combinations were evaluated at Manhattan, Kansas and at other Pioneer research stations. The line was confirmed to be true breeding and named 'PHOEVLVIT' in 2008. An outline of the breeding profile and criteria for selection at each generation of selection is attached.

'PHOEVLVIT' has shown stability for traits listed in Exhibit C. It has been self pollinated, bulk increased and checked for uniformity of plant type to assure genetic homozygosity and phenotypic stability. The line has been increased by hand pollination and in isolated field plantings with continued observation for uniformity. It has been observed to be stable and uniform for at least four generations. Harvested material of the line has not been released, marketed or sold in the U.S. or any other country prior to the filing of this application, February 28, 2011.



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This inbred will have a tall variant that occurs, due to mutation, at a frequency of 10 in 10,000 on the average. This is due to a gene that is unstable for height at the  $dw_3$  locus.

Pioneer Hi-Bred International, Inc., Des Moines, Iowa, is the employer of the plant breeders involved in the selection and development of 'PHOEVLVIT'. Pioneer Hi-Bred International, Inc. has the sole rights and ownership of 'PHOEVLVIT'.



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#201100284

## 14A. Exhibit A. Origin and Breeding History of 'PHOEVLVIT'

Sorghum inbred line.

<u>Season/ Year</u>	<u>Inbreeding Level</u>	<u>Nursery Location</u>	<u>Pedigree</u>	<u>Number of Heads Saved</u>
S/2003	F0	Manhattan, KS	PHOECJYIT/ PHWKGJQIT	
W/2003-04	F1	Puerto Vallarta, MX	PHOECJYIT/ PHWKGJQIT)	Bulk
S/2004	F2	Manhattan, KS	PHOECJYIT/ PHWKGJQIT)X	Bulk
W/2004-05	F3	Puerto Vallarta, MX	PHOECJYIT/ PHWKGJQIT)XX	40
S/2005	F4	Manhattan, KS	PHOECJYIT/ PHWKGJQIT)XXC1	2
W/2005-06	F5	Puerto Vallarta, MX	PHOECJYIT/ PHWKGJQIT)XXC11	2
S/2006	F6	Manhattan, KS	PHOECJYIT/ PHWKGJQIT)XXC111	2
W/2006-07	F7*	Puerto Vallarta, MX	PHOECJYIT/ PHWKGJQIT)XXC1111	2
S/2007	F8**	Manhattan, KS	PHOECJYIT/ PHWKGJQIT)XXC1111X	Bulk

January 2008- Line named 'PHOEVLVIT' and increased for breeder's bulk

2008-2010- Line increased by hand pollination and in isolated fields for use in hybrid seed production

\* Test cross made for yield testing

\*\* Line tested in several combinations to identify best hybrids



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## 14A. Exhibit B. Selection and Selection Criteria for 'PHOEVLVIT'

Generation	Traits Segregating	Selection Criteria
F <sub>1</sub>	Hybrid and inbred plants	Select hybrid plants based on markers
F <sub>2</sub>	Height, head type, maturity	Moderate height, semi-open head type
F <sub>3</sub>	Height, head type, maturity	Moderate height, semi-open head type
F <sub>4</sub>	Minor segregation for height, head type and uniformity	Select representative head from uniform row – plants of moderate height and semi-open head type
F <sub>5</sub>	Minor segregation for height, head type and uniformity	Select representative head from uniform row – plants of moderate height and semi-open head type
F <sub>6</sub>	Minor segregation for height, head type	Select representative head from uniform row – plants of moderate height and semi-open head type
F <sub>7</sub>	Uniform for height and head type	Select representative head from uniform row – plants of moderate height and semi-open head type
F <sub>8</sub>	Uniform height and head type	Select random head



SECRET

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'14B. Exhibit B. Statement of Distinctness

'PHOEVLVIT' is most similar to Wheatland, a widely used public inbred. Both inbreds are maintainer lines, and both have purple plant color and are awnless.

'PHOEVLVIT' is different from Wheatland in several traits. Compared to Wheatland, 'PHOEVLVIT' has dark tan glume color where Wheatland has black glumes. 'PHOEVLVIT' has semi-open head type where Wheatland's head type is semi-compact. 'PHOEVLVIT' has dark red grain color where Wheatland has light red grain color. 'PHOEVLVIT' has cloudy midrib color where Wheatland has yellow midrib. 'PHOEVLVIT' has green coleoptile color where Wheatland has red coleoptiles.

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According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W. Washington, D. C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705

EXHIBIT C

OBJECTIVE DESCRIPTION OF VARIETY  
SORGHUM AND RELATED CROPS

NAME OF APPLICANT (S) Pioneer Hi-Bred International, Inc.	TEMPORARY OR EXPERIMENTAL DESIGNATION 56-144	VARIETY NAME 'PHOEVLVIT'
ADDRESS (Street and No. or RD No., City, State, Zip Code, and Country) 2260 CR 60 Plainview, TX 79072		FOR OFFICIAL USE ONLY PVPO NUMBER #201100284

NOTE: Observations should be made on an appropriate number of well spaced plants (approximately 15 cm spacing).

## 1. GENERAL CATEGORIES

- 1 Kind: 1 Sorghum 2 = Sorghum X Alnum 3 = Sudangrass 4 = Johnsongrass 5 = Other \_\_\_\_\_
- 2 Inbred Type: 1 Male Sterile 2 = Maintainer 3 = Restorer
- 1 Male Sterile Cytoplasm: 1 = A-1 2 = A-2 3 = A-3 4 = A-4 5 = A-5 6 = Other \_\_\_\_\_
- 1 Use Class: 1 Grain 2 = Forage 3 = Silage 4 = Sugar 5 = Syrup 6 = Broomcorn 7 = Multipurpose (specify) \_\_\_\_\_

## 2. MATURITY

- 65 Days From Planting To Mid-Anthesis
- 5 Number Days Earlier Than 4 1 TX3042 2 = Wheatland 3 = TX2737 4 = TX430 5 = Redland
- Number Days Later Than 6 = Other Public Line (Specify) \_\_\_\_\_

## 3. PLANT

- 1 Coleoptile: 1 Green 2 = Red
- 3 Plant Pigment: 1 Tan 2 = Red 3 = Purple 4 = Other (Specify) \_\_\_\_\_

## 4. STALK

- 3 Diameter (Main Stalk): 1 Slim 2 = Mid-Stout 3 = Stout

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## 5. STALK HEIGHT

120 cm From Soil To Top Of Panicle

#201100284

cm Less Than

1 TX3042 2 = Wheatland 3 = TX2737 4 = TX430 5 = Redland

15 cm Greater Than 4

6 = Other Public Line (Specify)

3 No of Recessive Height Genes Plant Height Genotype (Mark only recessive): X dw1    dw2 X dw3 X dw4

1 Waxy Bloom

1 Present 2 = Absent

1 Tillers:

1 Few 2 = Moderate 3 = Many

2 Sweetness:

1 Sweet 2 = Insipid

1 Juiciness:

1 Dry (Pithy) 2 = Juice

1 Panicle Exsertion:

1 Short 2 = Medium 3 = Long

3 Degree of Senescence:

1 Senescent 2 = Nonsenescent 3 = Intermediate

## 6. LEAF (First leaf below flag leaf)

3 Width (Relative to Class):

1 Narrow 2 = Moderate 3 = Wide

2 Color:

1 Light Green 2 = Dark Green

2 Margin:

1 Smooth 2 = Wavy

2 Attitude:

1 Erect 2 = Horizontal 3 = Drooping

2 Ligule:

1 Present 2 = Absent

3 Midrib Color:

1 White 2 = Intermediate 3 = Cloudy 4 = Yellow 5 = Brown

## 7. PANICLE

2 ANTHOR COLOR (At Flowering)

1 White 2 = Light Yellow 3 = Dark Yellow 4 = Wine

30 cm Panicle Length

cm Less Than

1 TX3042 2 = Wheatland 3 = TX2737 4 = TX430 5 = Redland

5 cm Greater Than 3

6 = Other Public Line (Specify)

2 Density:

1 Open 2 = Semi-Open 3 = Semi-Compact 4 = Compact

3 Shape:

1 Round 2 = Oval 3 = Cylindrical 4 = Conical 5 = Obovate

2 Length of Central Rachis (% of Panicle Length): 1 100% 2 = 75% 3 = 50% 4 = 25%

1 Rachis Branches (At Grain Maturity)

1 Erect 2 = Horizontal 3 = Drooping

3 Rachis Branch Averag

1 Short 2 = Intermediate 3 = Long

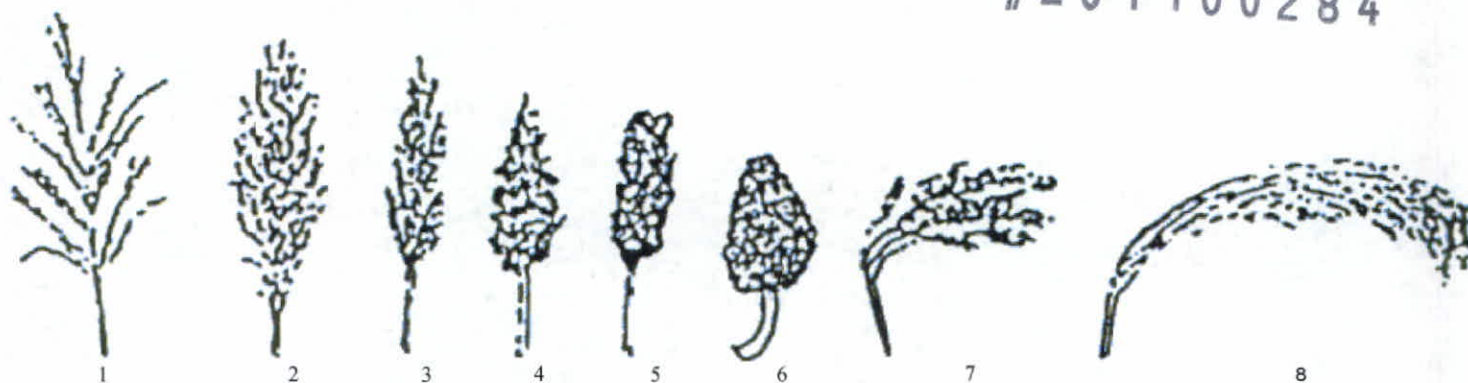


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## 7. PANICLE (Continued)

3 Panicle Type (Select Number from Diagram Below)

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## Glumes

- 2 Length: 1 Short 2 = Intermediate 3 = Long
- 2 % of Grain Covered by Glume: 1 25% 2 = 50% 3 = 75% 4 = 100% 5 = Over 100%
- 1 Texture: 1 Papery 2 = Intermediate 3 = Tough
- 5 Color (At Grain Maturity): 1 Black 2 = Mahogany 3 = Red 4 = Sienna 5 = Dark Tan 6 = Light Tan
- 2 Hairiness: 1 Smooth 2 = Intermediate 3 = Hairy
- 2 Venation: 1 Present 2 = Absent
- 2 Transverse Wrinkle: 1 Present 2 = Absent
- 1 Awns: 1 Absent 2 = Short 3 = Intermediate 4 = Long

## 8. ROOTS

- 1 1 Fibrous 2 = Rhizomatous

## 9. GRAIN

- 1 Testa: 1 Absent 2 = Present
- 1 Testa Color: 1 Brown 2 = Purple
- 1 Mesocarp Thickness: 1 Thin 2 = Intermediate 3 = Thick
- 3 Epicarp Color (Genetic): 1 White 2 = Lemon Yellow 3 = Red
- 1 Spreader (Tannin in Pericarp): 1 Absent 2 = Present
- 2 Intensifier: 1 Absent 2 = Present
- 6 Grain Color (Appearance): 1 White Pearly 2 = White Chalky (Opaque 3 = Yellow 4 = Lemon Yellow
- 5 = Light Red 6 = Dark Red 7 = Light Brown 8 = Reddish Brown 9 = Dark Brown
- 10 = Purple 11 Other (Specify) \_\_\_\_\_

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**9. GRAIN (Continued)**

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1 Endosperm Color:

1 White 2 = Yellow

1 Endosperm Type:

1 Starchy 2 = Waxy 3 = Sugary

2 Endosperm Texture:

1 Flourey 2 = Intermediate 3 = Corneous

2 Seed Shape:

1 Round 2 = Oval 3 = Ovate 4 = Turtleback

:

5 = Flat 6 = Wedge 7 = Other (Specify) \_\_\_\_\_

3000 No. of Seed per 100 G Genotype (if known):

R, Y, I, Z, B1, B2, S, Tp, Wx, Fl

Define) \_\_\_\_\_

**10. DISEASE RESISTANCE (1 = Susceptible 2 = Intermediate 3 = Resistant)**

Bacterial Stripe, Charcoal Rot, Maize Dwarf Mosaic Virus, Ruccinia (Rust), Bacterial Streak, Bacterial Spot, Anthracnose, Head Smut, Sooty Stripe, Downy Mildew, Grain Mold, Fusarium Stalk Rot or Others.

REACTION	DISEASE	CAUSAL AGENT	RACE OR PATHOTYPE

**11. INSECT RESISTANCE (1 = Susceptible 2 = Intermediate 3 = Resistant)**

Sorghum Midge, Chinch Bug, Greenbug or Others.

REACTION	INSECT	BIOTYPE

**12. MOLECULAR TRAITS**

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13. OTHER DISTINGUISHING TRAITS

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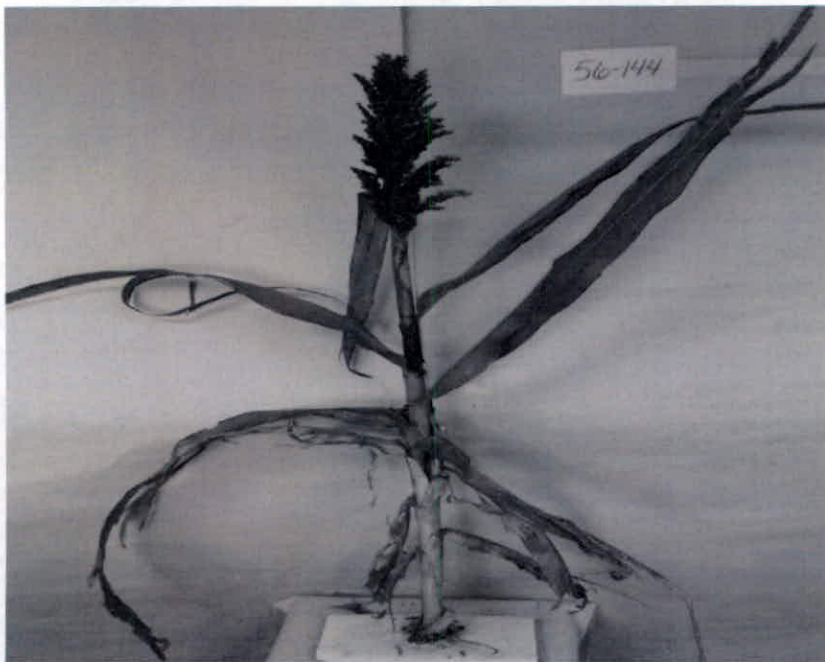


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#201100284

14D. Exhibit D. Additional Description of 'PHOEVLVIT'

a. Whole plant



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14D. Exhibit D. Additional Description of 'PHOEVLVIT'

b. Head



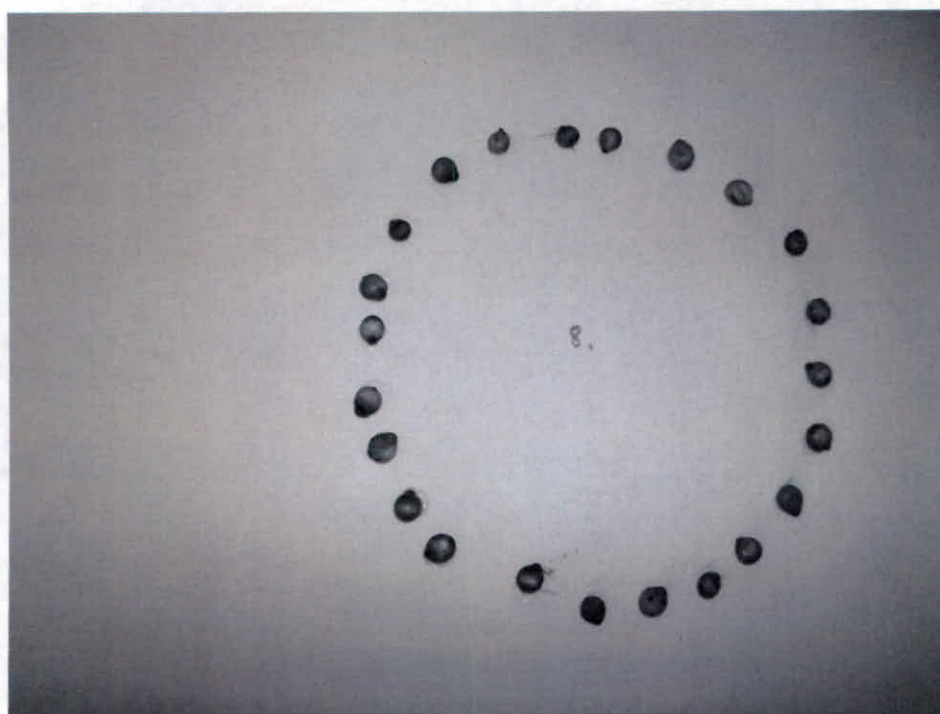


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14D. Exhibit D. Additional Description of 'PHOEVLVIT'

c. Seed



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U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

1. NAME OF APPLICANT(S)  Pioneer Hi-Bred International, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER 56-144	3. VARIETY NAME  'PHOEVLVIT'
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)  2260 CR 60 Plainview, TX 79072	5. TELEPHONE (Include area code)  (806) 296-4680	6. FAX (Include area code)  (806) 296-4677
7. PVPO NUMBER  #201100284		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain.

☒ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country.

☒ YES ☐ NO

10. Is the applicant the original owner?

☒ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

Pioneer Hi-Bred International, Inc., Des Moines, Iowa, is the employer of the plant breeders involved in the selection and development of.

Pioneer Hi-Bred International, Inc., Has the sole rights and ownership.

**PLEASE NOTE:**

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41 (a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA, s TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.



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According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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**U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705**

**EXHIBIT F  
DECLARATION REGARDING DEPOSIT**

<b>NAME OF OWNER (S)</b>  Pioneer Hi-Bred International, Inc.	<b>ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country)</b>  2260 CR 60 Plainview, TX 79072	<b>TEMPORARY OR EXPERIMENTAL DESIGNATION</b> 56-144  <b>VARIETY NAME</b> 'PHOEVLVIT'
<b>NAME OF OWNER REPRESENTATIVE (S)</b>  <div style="border: 1px solid black; padding: 5px; width: fit-content;">Dr. K. S. Porter</div>	<b>ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country)</b>  2260 CR 60 Plainview, TX 79072	<b>FOR OFFICIAL USE ONLY</b>  <b>PVPO NUMBER</b> #201100284

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Signature

Date

*Kay S. Porter*

*28 Feb 2011*

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